

**FINAL REPORT
OF THE MANITOBA
REGIONAL WASTE MANAGEMENT
TASK FORCE**

**Regional Integrated Waste Management
Action Plan and Recommendations
December 1999**

Manitoba Conservation Report 2000-02

**Regional Waste Management Task Force Final Report:
Regional Integrated Waste Management Action Plan and Recommendations
December 1999**

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INTRODUCTION

The *Final Report of the Manitoba Regional Waste Management Task Force (RWMTF): Regional Solid Waste Management Action Plan and Recommendations* is the final product of a multi-stakeholder consultation process undertaken by the Task Force over the period of November 1998 to November 1999. The Task Force focused its efforts on better understanding Manitoba's current solid waste management system and regional waste activities in comparison to how other jurisdictions address solid waste management. Establishment of the Task Force was prompted, in part, by the level of new waste disposal facility developments in the province and concern over increased landfill capacity and its impact on waste reduction activities in the Capital Region. In addition, even though stewardship programs were established to support municipal waste reduction activities throughout the province, municipalities and private sector waste management firms continued to request financial support for waste management activities.

The objective of the Task Force was to develop a *Regional Solid Waste Management Action Plan that would propose a vision for a province-wide solid waste management system to minimize risk to human health and the environment and support the continued growth of the Manitoba economy*. To achieve this the Task Force met with a variety of stakeholders, received feedback through a discussion document and questionnaire, participated in workshops and seminars, visited local waste management facilities and reviewed waste management legislation and strategies in place in Canada and the United States.

Since its inception, the RWMTF has viewed its activities as the beginning of a process to improving solid waste management practices in the Province of Manitoba, not an end in itself. It is hoped that the discussions and information exchanges that have been initiated will broaden the understanding of solid waste management issues, problems and achievements in the province. The Task Force has developed a proposed vision for solid waste management in Manitoba, and has identified and put forward a number of recommendations on how waste management might be improved. It is intended that ongoing public processes be used to further refine the proposed vision and recommendations, and to define and implement a regional integrated waste management system for Manitoba that is comparable to any in North America.

ACKNOWLEDGEMENTS

The Regional Waste Management Task Force would like to acknowledge the assistance and resources provided by the Association of Manitoba Municipalities and the Northern Association of Community Councils.

The Task Force would also like to acknowledge the participation and input of solid waste management stakeholders and citizens of Manitoba through their input at stakeholder meetings, forums and gatherings. The commentary from stakeholders and citizens helped form the basis of the vision and recommendations put forward for consideration by the Government of Manitoba.

EXECUTIVE SUMMARY

The *Final Report of the Regional Waste Management Task Force: Regional Integrated Waste Management Plan and Recommendation* is the result of almost a year of research and stakeholder consultations by the Regional Waste Management Task Force (RWMTF).

In November 1998, the Minister of Environment established the Regional Waste Management Task Force to review waste management activities throughout Manitoba and to make recommendations to the Government of Manitoba on opportunities to support the further development of regional waste management systems throughout the province.

To formulate its recommendations, the RWMTF reviewed solid waste management policy, plans, trends and operations within Manitoba and throughout North America. Broad stakeholder consultations over a period of several months were conducted. The Task Force Discussion Document: *Regional Waste Management in Manitoba: Integrated Waste Management Issues and Opportunities* was the focus of discussion.

The *Regional Integrated Waste Management Action Plan and Recommendations* provides a provincial vision for solid waste management that reflects trends and lessons that have been learned by communities across the province, throughout Canada and the United States. The vision is based on reduced dependence on landfilling; clear, concise and consistently enforced environmental standards; and regional solid waste planning.

Intended as a framework to guide potential actions, activities and decisions, forty-four recommendations have been divided into eleven action areas and are complemented by eighteen consensus-based observations. The proposed recommendations are framed under three categories of action:

- High Environmental Protection;
- Integrated Solid Waste Management; and
- Regional Coordination.

The actions grouped under **high environmental protection**, include: a level playing field; reformed waste management facility approval process; and amending the Waste Disposal Ground Regulation. **Integrated solid waste management** action areas include: regional solid waste planning; improved waste reduction and diversion components; establishing partnerships; and, economic incentives. **Regional coordination** action areas include: coordinated technical assistance; funding provisions; establishing flexible regional solid waste management districts; and attention to northern and remote communities.

The Task Force's Report is not intended to be the completion of a planning process, only the start. As a result of the progressive solid waste reduction and diversion work that is being undertaken by local governments, private sector firms, public sector agencies, non-governmental organizations, stewardship agencies and citizens throughout Manitoba, an excellent foundation for furthering waste reduction efforts has been established. The RWMTF hopes that its report and recommendations will help to provide directions to build on the established foundation and provide a framework for an integrated solid waste management system of the highest quality for Manitoba.

SELECTED QUOTES FROM STAKEHOLDERS

"Some municipalities have made significant progress with...regional facilities. Other municipalities are beginning to make progress while some are having difficulty."

Municipal Stakeholder

"We all can't afford to have proper equipment and [WDG] sites every ten to fifteen miles across the countryside."

Municipal Stakeholder

"We gained access to a service facility that we could not afford on our own."

Municipal Stakeholder.

"Municipalities who participate have realized that by bulking resources together, it is more cost efficient thus less of a burden on the taxpayers. The environmental benefits are phenomenal."

Municipal Stakeholder.

"[A barrier to the development of regional waste management systems is the] perception of loss of control if an R.M. does not own/operate their own facility."

Municipal Stakeholder.

"[The size of regional districts should be decided] by whatever makes sense and is equitable to all parties."

Municipal Stakeholder.

"Without a clear understanding of the costs of current waste management practices and policies, communities and policy makers will be forced to make critical assumptions which may lead to faulty decision-making."

NGO Stakeholder.

"...Road quality does not support heavy traffic."

First Nation Stakeholder.

"The ability to make rapid decisions without a diversity of inputs has proven to work against upholding environmental standards."

NGO Stakeholder.

"It may be cheaper to avoid the public process but it is far less transparent and accountable."

Citizen

"...Ensure a level playing field and take the environmental high road."

Private WDG operator.

"A guidelines manual would undoubtedly be helpful."

Citizen

TERMS OF REFERENCE

The Minister of Environment established the Regional Waste Management Task Force (RWMTF) in November 1998 to review solid waste management activities throughout the province and to make recommendations to the Government of Manitoba on opportunities to support the further development of regional waste management systems in Manitoba.

The objective of the RWMTF was to develop a *Regional Solid Waste Management Action Plan that will propose a vision for a province-wide solid waste management system to minimize risk to human health and the environment and support the continued growth of the Manitoba economy*. A component of the Task Force's mandate was to make recommendations on the provision of strategic financial assistance to support regional waste management system development. As part of the Regional Waste Management Task Force's Terms of Reference, approval in principle was given by the Government of Manitoba to consider funding of up to \$25,000 per municipal participant in a regional waste management system. The Task Force was asked to provide recommendations on how that funding should be made available.

In developing the Action Plan, the Task Force:

- reviewed solid waste management activities in Manitoba;
- reviewed waste management strategies in other jurisdictions;
- reviewed provincial waste management facility operating and regulatory requirements;
- undertook public consultations; and
- made recommendations on waste management practices and funding criteria to support regional waste developments.

Time Table

The table below summarizes the Regional Waste Management Task Force's planning process.

Objective	Time Frame	Milestones
Planning	November 1998 to January 1999	• Identification of Task Force activities. • Review information and undertake research. • Develop consultation strategy and time table.
Stakeholder Consultations	January 1999 to July 1999	• Develop Discussion Document and Questionnaire. • Consult stakeholders via meetings, workshops, etc.
Draft Action Plan and Recommendations	July 1999 to November 1999	• Submission of report.

TASK FORCE COMPOSITION

The Task Force was comprised of the following members:

Chairperson

- Jim Potton, Manitoba Clean Environment Commission

Members

- Mayor Ron Bell (Town of Birtle), Association of Manitoba Municipalities
- Charles Conyette, Manitoba Environment ¹
- Dave Ediger, Manitoba Environment
- Garry Haggerty, Manitoba Rural Development ¹
- Reeve Peter Heide (Rural Municipality of Riverside), Association of Manitoba Municipalities
- Kathy Jackson, Northern Association of Community Councils
- Cliff Lee, Manitoba Environment
- Doug Peterson, Manitoba Environment
- Jim Petsnik, Manitoba Natural Resources ¹
- Ed Sawatzky, Manitoba Rural Development

Support Staff

- Jim Ferguson, Manitoba Environment
- Darren Mochrie, Manitoba Environment

¹ Subsequent to the completion of the Regional Waste Management Task Force's Final Report, Manitoba Environment, and the Departments of Natural Resources and Energy have been amalgamated into a new Department—*Manitoba Conservation*. The Departments of Rural Development and Urban Affairs have also been amalgamated into a new Department—*Manitoba Intergovernmental Affairs*.

CONSULTATION PROCESS SUMMARY

To assist the RWMTF gain a better understanding of current waste management trends and practices in Manitoba and elsewhere a five-part consultation process was utilized. The process included the following components:

1. Research

A comprehensive review of waste management regulations, strategies and operational regional waste systems in North Dakota, Saskatchewan, Nova Scotia, Montana, Alberta, and California was undertaken. In addition, site tours of local waste management facilities provided an overview of operational facilities in Manitoba².

2. Stakeholder Meetings

The Task Force met with a variety of solid waste management stakeholders to obtain information on current local solid waste management activities and issues. Additionally, the meetings provided a forum for questions and the exchange of information between the Task Force and stakeholders.

3. Discussion Document and Questionnaire

A discussion document was created to provide background on the opportunities and constraints of developing a regional approach to solid waste management in Manitoba. A consultation package consisting of the discussion document and questionnaire was distributed in May 1999 to over four hundred waste management stakeholders.

4. Workshops

A series of presentations, workshops, discussions and forums with various waste management stakeholders were held throughout the province. Meeting locations included:

- R.M of St. Clements local government forum, Lockport (January 18, 1999)
- AMM Municipal Officials Conference, Brandon (March 2, 1999)
- Northern Association of Community Councils, Winnipeg (March 11, 1999)
- Department of Northern Affairs Regional Directors, Winnipeg (April 22, 1999)
- Rural Forum, Brandon (April 29, 1999)
- Manitoba Municipal Administrators Association Conference, Brandon (April 26, 1999)
- Northern Manitoba Roundtable, Winnipeg (May 12, 1999)

5. Feedback

The responses from stakeholder meetings, workshops and returned questionnaires were recorded. An analysis of this feedback and results of the Task Force's research form the basis of this document.

² A comprehensive research archive of regional waste management regulations, strategies, guidelines and photographs generated by the Regional Waste Management Task Force are available from Manitoba Conservation's Pollution Prevention Branch.

CONTINENTAL SOLID WASTE MANAGEMENT TRENDS

Solid waste management trends and activities³ in other jurisdictions can provide valuable lessons to guide Manitoba's solid waste management strategy. Research conducted by the RWMTF identified a number of significant trends that have impacted solid waste management practices in North America over the past decade. Common objectives for most jurisdictions include the establishment of waste reduction targets and the adoption of new approaches to managing the waste stream to improve efficiency and environmental protection. The following table highlights the key trends identified by the Task Force:

Solid Waste Management Trend	Description
Larger engineered landfills	New larger landfills are being constructed using better environmental protection technologies than older generation landfills.
Regionalization of waste management services and planning	Communities are forming solid waste planning and service partnerships on a regional scale.
Increased transfer of solid waste	The establishment of transfer stations and transporting solid waste to distant sites as an alternative to the development of new landfills.
Higher solid waste management regulatory standards	The standards for the design, construction, and operation of solid waste management facilities and systems has increased. Designated facilities for municipal solid waste disposal, construction and demolition (inert) wastes, organic waste and special waste management are common.
Greater emphasis on waste reduction, diversion and development of integrated solid waste management systems	Communities are utilizing better methods of reducing and diverting material away from landfills, such as employing integrated solid waste management systems, collecting and managing source segregated waste streams, banning materials from landfill, and implementing unit based (user pay) systems and other economic instruments.
Movement towards product stewardship	Manufacturers and distributors are taking more responsibility for the environmental impact of their products.
Employment of full-cost accounting methods	Solid waste management decision and evaluation criteria are increasingly based on full (environmental, social and economic) cost analysis.

³ *Biocycle's* April 1999 issue contains their 11th annual national survey entitled *The State of Garbage* which provides an excellent overview of solid waste management activities in the United States.

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SOLID WASTE MANAGEMENT IN MANITOBA—AN OVERVIEW

Various methods were used to gather information on how solid waste is being managed in Manitoba, including a survey of waste management facilities, meetings with local stakeholders, and site visits to several waste management facilities across the province. In general, the findings indicate that waste disposal ground consolidation is taking place with waste transfer and alternative waste diversion systems becoming an increasingly prevalent solid waste management option. However, significant landfill development activity is continuing with only limited consideration of regional partnerships as an option.

Waste Generation

An estimated 950,000 tonnes of waste (840 kg/person/year) was sent to waste disposal grounds in Manitoba in 1996⁴. This represents a 16 % decrease in the amount of waste disposed per capita between 1989 and 1996. Manitoba's waste reduction goal is to reduce waste by 50% by the year 2000. This will be achieved when the amount of waste going to landfill is reduced to a level of 500 kg/person/year. Manitoba's Capital Region accounts for approximately 60% (560,000 tonnes) of the total waste generated in the province.

Economic Impact

The economic impact of waste management in Manitoba is significant. Many municipalities and local governments throughout the province have historically not charged directly for solid waste services, either through tipping fees or other charges. For the municipalities that do charge tipping fees, the fees range from \$17 to \$40/tonne. However, the majority of individual waste disposal sites operated by local governments do not charge for disposal. Overall, expenditures for solid waste management services by Manitoba municipalities totaled \$31 million in 1996. Additionally, almost 1,000 people are directly employed in the public and private sector waste management service sector.

Waste Management Industry - 1996 (Statistics Canada, 1996)

	Public Sector	Private Sector
Employees	550	380
Operating Revenues	n/a	\$49 million
Operating Expenditures	\$31 million	\$41 million

⁴ Statistics Canada, *Preliminary Results of the Waste Management Industry Survey: Business Sector, 1996*. Environment Accounts and Statistics Division.

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Waste Disposal Grounds

Currently, there are 314 active waste disposal grounds (WDGs) in the province. Over 65% of these facilities are Class 3 WDGs serving populations of less than 1,000. Since enactment of the Waste Disposal Ground Regulation in 1991, 127 WDGs have been closed. An additional 100 WDGs are scheduled for closure or further environmental assessment over the next five years. Additional closures may be necessary due to capacity limitations or operating cost concerns in the future. A total of 11 WDGs are scheduled for development or upgrading within two years.

Manitoba Waste Disposal Grounds (Manitoba Environment, 1999)

WDG Class ⁵	Private	Class 1	Class 2	Class 3	Total
Active	19	11	77	207	314
Known Closed	10	8	33	173	224

WDGs to be Developed or Upgraded within Two Years (Manitoba Environment, 1999)

	Private	Class 1	Class 2	Class 3	Total
# WDGs	0	1	8	2	11

WDG Closures

A significant number of WDGs are scheduled for closure over the next 5 years. A total of 70 WDGs have been identified for closure and an additional 26 require further site suitability investigation in order to determine their future.

Disposal Grounds to be Closed within One Year (Manitoba Environment, 1999)

	Private	Class 1	Class 2	Class 3	Total
# WDGs	0	0	16	17	33

Disposal Grounds to be Closed within Five Years (Manitoba Environment, 1999)

	Private	Class 1	Class 2	Class 3	Total
# WDGs	4	2	4	27	37

Disposal Grounds Requiring Further Investigation (Manitoba Environment, 1999)

	Private	Class 1	Class 2	Class 3	Total
# WDGs	3	1	6	16	26

⁵ Private: a WDG that is used by a private individual or corporation

Class 1: serves population greater than 5,000

Class 2: serves population between 1,000 and 5,000

Class 3: serves population less than 1,000

Waste Transfer

As waste disposal facilities are closed throughout the province, waste transfer stations are being established to facilitate solid waste collection and transportation. As a result there are now 53 solid waste transfer stations in operation.

Waste Transfer Stations by Region (Manitoba Environment, 1999)

Park West (South)	South Central	Eastern Interlake	Winnipeg Region	North	Total
25	18	6	4	0	53

Open Burning

Open burning of mixed municipal solid waste is prohibited at WDGs throughout the province. However, 90% of WDGs in the province are permitted to burn materials such as wood and paper. A number of local WDG operators have eliminated burning entirely by diverting wood, paper and other combustible waste to shredding, composting and recycling systems.

Alternative Waste Management Facilities

One of the greatest improvements to Manitoba's solid waste management system over the last decade has been the establishment of alternative waste management facilities. These facilities are important because they offer communities a reuse or recycling alternative for products and materials that may have previously gone to landfill. The development of alternative waste management facilities has been stimulated in part by the support provided by Manitoba's product stewardship agencies, including the Manitoba Product Stewardship Corporation (MPSC)—multi-material recycling; Manitoba Association for Resource Recovery Corporation (MARRC)—used oil, filters and containers; Tire Stewardship Board (TSB)—used tires; and the Crop Protection Institute of Canada (CPIC)—pesticide containers.

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Alternative Waste Management Facilities (Manitoba Environment, 1999)

Facility Type	Active Sites
Used Oil: MARRC Eco-Centres	20
Other Collection Centres	35
Used Tire Storage Compounds	120
Pesticide Container Compounds	120
Composting Facilities	38
Incinerators (biomedical/municipal solid waste)	26
Material Recovery Facility (municipal solid waste)	2
Recycling Processing Centre	31
Household Hazardous Waste Depots	9
Petroleum Contaminated Soil Sites	15
Construction and Demolition Sites	11
Other: Scrap Metal/Auto Wreckers	6

Waste Reduction and Diversion

Since 1995, recovery of residential recyclable materials has more than doubled to 33,600 tonnes in 1998. There are now 160 municipal recycling programs in operation. Municipal operators received over \$4.6 million in recycling support payments from the Manitoba Product Stewardship Corporation in 1998 to offset costs. In addition, the processing of an estimated 690,000 used passenger tire units is supported annually by the Tire Stewardship Board for recycling and energy recovery equaling the number of tire units sold. The used oil collection system being established by Manitoba Association Resource Recovery Corporation is now recovering in excess of 10.9 million litres of used oil annually or almost 50% of the amount considered recoverable.

There are a large number of excellent community-based waste reduction and diversion programs that are helping to divert up to 30-40% of the amount of municipal waste material from entering local landfills. A number of exceptional local waste diversion programs have been established, offering fine examples of communities who have addressed their solid waste management problems in an integrated and innovative way, with a high level of community spirit.

Regional Waste Management Systems in Manitoba

Development of regional solid waste management systems in the province has been increasing in recent years. There are currently 10 regional waste management systems, which involve three or more partners, in operation throughout the province. Additionally there are numerous partnerships between rural and urban municipalities that share a common waste disposal ground and some waste management costs. In addition to the 10 existing regional systems, 8 regional waste management partnerships are planned to be established within the next few years. The table below indicates the regional waste management systems, consisting of 3 or more partners, that have been identified in Manitoba.

Regional Waste Management Systems in Manitoba (1999)

Regional System Name	Number of Partners	Estimated Regional Population	Transfer Stations Established
BAR Co-operative (R.M. of Bifrost)	4	4,400	0
Springfield/Steinbach	6	28,900	2
Whitemouth/Reynolds	3	3,000	1
Altona/Gretna/Rhineland	3	8,000	0
SWAMP (Winkler/Morden/Stanley)	3	17,500	0
R.M. of Thompson	7	6,000	13
R.M. of Louise	3	2,200	0
R.M. of Woodworth	3	2,200	7
Municipal Waste Management (R.M. of Glenwood)	9	7,700	10
Brandon	3	44,900	2

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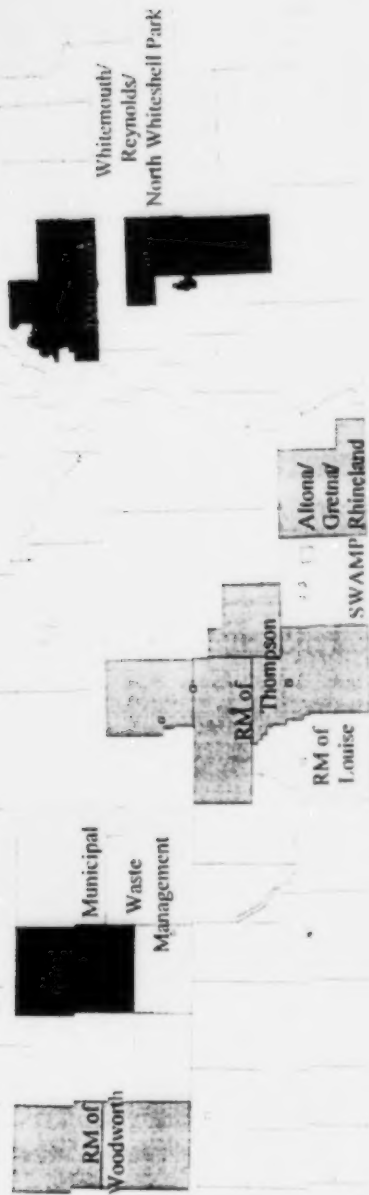
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Altona/Gretna/Rhineland	3	8,000	0
SWAMP (Winkler/Morden/Stanley)	3	17,500	0
R.M. of Thompson	7	6,000	13
R.M. of Louise	3	2,200	0
R.M. of Woodworth	3	2,200	7
Municipal Waste Management (R.M. of Glenwood)	9	7,700	10
Brandon	3	44,900	2

Current Regional Waste Management Systems



BAR
Co-operative

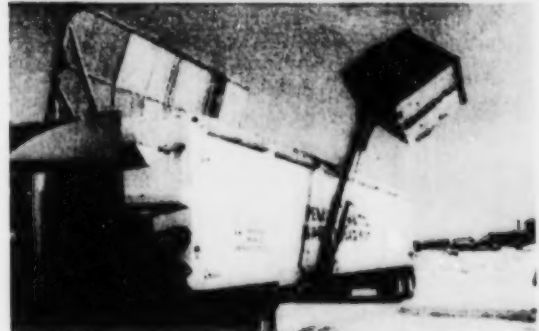


Case Study Highlights of Local Regional Waste Systems

The Task Force has prepared a series of case studies resulting from tours of waste management facilities. Highlights of three of those case studies are presented below:

R.M. of Thompson

- 7 partners with 13 transfer station sites
- Waste transferred to one WDG serving over 9,000 residents
- System includes urban and rural facilities



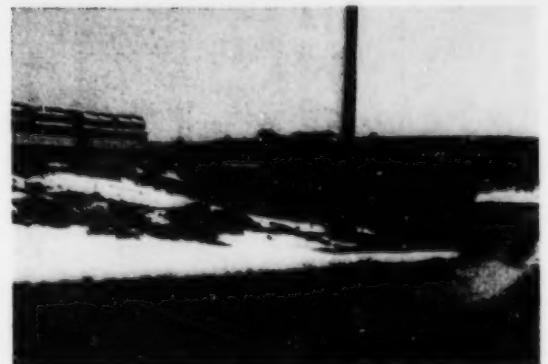
R.M. of Victoria

- Transfer station developed in 1997
- Serves 308 households
- Located at former WDG site
- Capital costs: \$107,000
- Annual operating cost: \$5,500



R.M. of Springfield

- Fully integrated waste management facility
- Located at former WDG site
- Largest waste transfer facility in Manitoba
- All solid waste transported out of the municipality

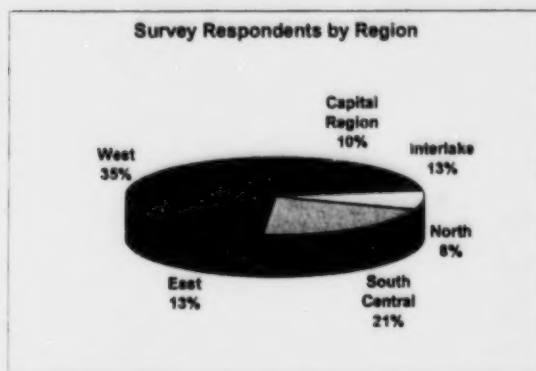


TASK FORCE FINDINGS

Stakeholder Feedback

The Task Force has met with a variety of local waste management stakeholders, received feedback through a discussion document and questionnaire, participated in workshops and seminars and visited local waste management facilities. The Task Force also reviewed waste management legislation and strategies in place in Canada and the United States. Research suggests that Manitoba's solid waste management activities are representative of the changing North American solid waste management scene. The following section highlights the Task Force's findings.

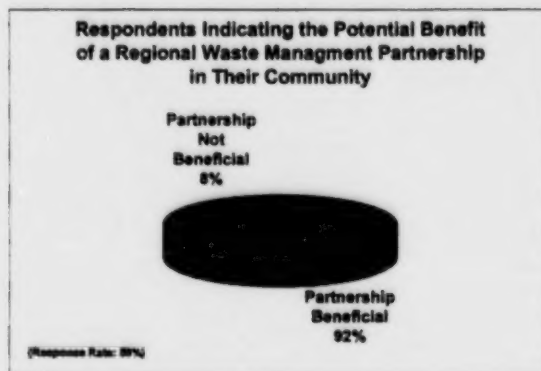
In total about 400 hundred questionnaires were distributed to a variety of stakeholder sectors. Response to the survey was positive with an 11% response rate. Responses were received from all regions of the province and a good cross section of sector representation was achieved.



Local Regional System Formation

Many municipalities across North America have adopted a regional partnership model on either a formal or informal basis for solid waste services. Many have made the shift towards a regional model based on the potential economic and environmental benefits associated with such systems.

Local governments in Manitoba that are involved in a regional solid waste management system, indicated that the formation of a regional partnership has been a positive



experience. Many noted that they are able to operate more efficient solid waste management systems by sharing costs, risks, liabilities, take advantage of economies of scale, and that the established systems would not have been possible without a regional partnership.

However, while the potential benefits of regional partnerships are apparent to many communities, a number of barriers were identified that have impeded the development of regional solid waste management systems in Manitoba. One of the most significant barriers identified, was the current WDG classification system and the associated environmental approval process set out in the Waste Disposal Ground Regulation. Under the Regulation, the development of smaller Class 2 and 3 sites, serving populations of less than 5,000, may be approved through an Operating Permit issued by a Regional Director. The development of a waste disposal ground serving a population greater than 5,000, requires approval through an Environment Act licencing process. As a result of this process being more rigorous and complex to undertake, the development of smaller WDGs may be favoured over the formation of regional partnerships.

Other barriers to the development of regional solid waste management partnerships that were identified included:

- the perceived high cost;
- complacency and competing priorities;
- lack of a perceived problem with the existing system;
- perceived lack of control within a partnership (decision making, costs);
- difficulty in coming to a fair cost sharing agreement;
- resistance to change;
- difficulty in establishing partnerships with other jurisdictions; and
- lack of technical assistance associated with the establishment of regional partnerships.



The obstacles outlined by Manitoba solid waste management stakeholders are consistent with barriers identified by communities outside of Manitoba.⁶

In light of the barriers to developing solid waste management partnerships, stakeholders indicated that financial incentives, more information and technical assistance would encourage them to consider a regional approach. Other responses included:

- establishment of pilot projects to demonstrate the benefits of a regional approach;
- education; and
- support for regional planning and coordination.



⁶ United States Environmental Protection Agency and National Association of Regional Councils. *Joining Forces on Solid Waste Management: Regionalization is Working in Rural and Small Communities*. USEPA: 1993.

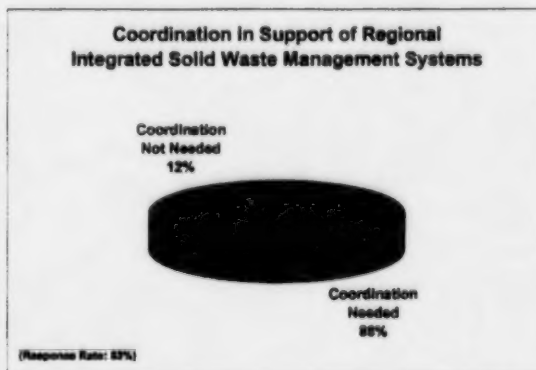
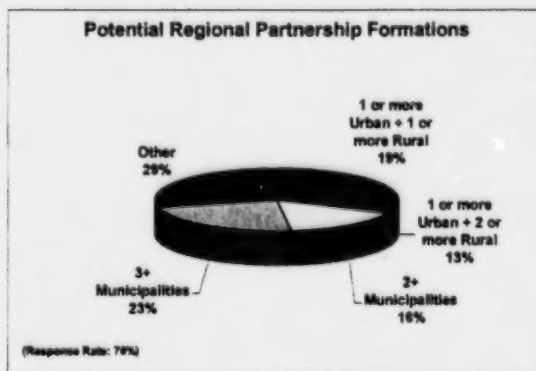
When addressing regional solid waste partnership planning and implementation, one of the most prevalent issues brought to the attention of the Task Force was how regional boundaries should be established. Three scenarios were presented:

- waste management districts set by the senior level of government in a “top-down” fashion (mandatory planning);
- a grass-roots “bottom-up” system allowing the formation of regional partnerships (voluntary planning); and
- a hybrid model designed to establish regional solid waste management boundaries with each local government having the option to join a distinct regional district if desired (voluntary planning).

A scan of regional solid waste management systems across the continent revealed that, in terms of the actual regional system boundary formation, there are many successful examples of models based on the “top-down”, “bottom-up” and hybrid models. Survey respondents favoured the “bottom-up” and “hybrid” approaches. Responses from communities where regionalization of solid waste services had been implemented indicated that community-based design and control was important.

In addition to issues surrounding the formation of regional solid waste management districts, there are also corresponding issues associated with the size of regional waste partnerships. Ideally, partnerships should be large enough to take advantage of economies of scale, yet small enough to be manageable. Regional solid waste systems throughout Alberta and Saskatchewan have an average population of approximately 20,000 per system. Currently there are regional systems in operation in Manitoba that serve populations as small as 2,200 and as large as 45,000.

Stakeholders indicated that in order to achieve efficiencies of a broad-based regional solid waste management system, system size should be determined individually based upon local conditions and requirements. A majority of respondents indicated “other” as a response when presented options on the size of regional partnerships. The second highest segment of respondents indicated that 3 or more local governments should comprise a regional system.



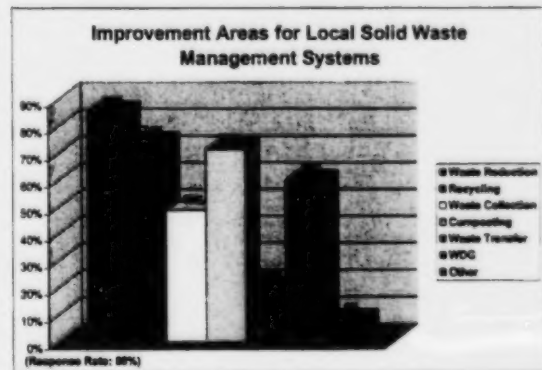
When asked if coordination is needed to assist in establishing regional partnerships, stakeholders indicated that coordination was crucial. Coordination may be defined as technical assistance in the form of partnership facilitation, consensus building or other similar techniques. With the notion that coordination is necessary in order to support the development of regional systems, stakeholders were divided in coming to a conclusion on what agency should be given the task of coordinating regional integrated solid waste management systems. Responses included:

- Department of Environment;
- Association of Manitoba Municipalities;
- Manitoba Planning Districts;
- Stewardship organizations; or
- New multi-sectoral agency or board.

Integrated System Components

Stakeholders identified a number of areas where improvement was needed in their existing solid waste management systems. The survey identified the following components as systems that local governments were interested in improving:

- waste reduction;
- multi-material recycling and marketing;
- composting;
- waste disposal ground(s);
- white goods recycling and ozone depleting substance recovery;
- used tire pick up service;
- used oil collection facilities; and
- household hazardous waste collection.



Lack of information about opportunities and responsibilities of Manitoba's stewardship programs was identified in all regions of the province.

Additionally, responses from stakeholders indicated that technical and/or financial assistance was needed for the following components:

- feasibility studies;
- engineering design;
- waste management planning;
- infrastructure; and
- waste reduction programs.

Provincial Stewardship Programs

Feedback provided by stakeholders on waste reduction and recycling activities in the province was consistent with feedback from the Waste Reduction and Prevention 1998 (WRAP 98) Workshop⁷. These processes clearly indicate that while significant progress has been achieved additional efforts are needed. Overcoming some of the biggest hurdles to developing regional waste systems and improving the efficiencies of the waste management system requires increased coordination and involvement of Manitoba's stewardship agencies. Common barriers to improved practices identified included: lack of communication and information; lack of technical assistance; lack of economic incentives; and high transportation costs. Sentiments put forth by stakeholders clearly favour more direct communication, assistance and strategic investment by stewardship agencies.

Manitoba's stewardship agencies have a critical role to play in assisting with the development of regional integrated waste management systems. Stakeholders have consistently identified the need for additional funding to further assist with waste reduction and diversion efforts. Stewardship program resources have been identified as a potential source of funding. Public interest remains high for improving waste management systems and waste reduction programs with the various stewardship agencies playing an integral part. However, alternative waste management systems in Manitoba that are designed to improve waste diversion, recovery and reduction will continue to compete with the availability of low-cost disposal options in the province.

Waste Reduction

While progress has been achieved in establishing recycling and waste diversion systems, Manitoba has one of the highest waste generation rates in Canada (see Provincial Waste Generation Rates Table below).⁸ Manitoba's numerous waste disposal grounds have created a low cost, "disposal friendly" environment. While considerable effort has been made by local governments and the Province of Manitoba to close WDGs that pose a potential environmental risk, the development of new waste disposal grounds has been relatively easy due to a small population density and soils that are rich in clay content, which are considered favourable for waste disposal ground development. Additionally, solid waste management in Manitoba has not taken a full-cost approach to evaluating solid waste management systems. All of the above factors have contributed to create a system that continues to economically favour landfilling over waste minimization.

⁷ A summary of the WRAP 98 Workshop entitled *Setting the Vision for Waste Reduction to the Year 2000: WRAP 98 Workshop Summary* is available through Manitoba Conservation's Pollution Prevention Branch.

⁸ Statistics Canada. *Preliminary Results of the Waste Management Industry Survey: Business Sector, 1996*. Environment Accounts and Statistics Division.

Provincial Waste Generation Rates (Statistics Canada, 1996)⁹

Province	Population (1996)	Waste Generation Rate (kg/person/year)
Newfoundland	553,206	670
Nova Scotia	931,235	590
New Brunswick	752,995	670
Quebec	7,286,231	750
Ontario	11,100,876	610
Manitoba	1,134,346	840
Saskatchewan	1,019,459	880
Alberta	2,780,639	880
British Columbia	3,882,043	620

Other provinces have achieved higher waste diversion levels for a variety of reasons, including: mandatory source separation regulations, landfill bans, mandatory waste management planning, investment in facilities for composting, as well as differing environmental pressures and economics of landfilling waste. On the other hand, Manitoba is one of the few jurisdictions in North America to have effectively established product stewardship programs on such a comprehensive level. Nowhere in Canada are municipalities eligible for funding support of up to 80% of the cost of municipal residential recycling systems.

Active Waste Disposal Grounds

How does Manitoba compare to other provinces and states when it comes to the number of active landfills? A scan of provinces and states that either have similar geographic characteristics to Manitoba or that have achieved high waste diversion rates, indicates that Manitoba has a high number of landfills compared to its population size and geographic area. Of the states and provinces surveyed, Saskatchewan has more active landfills than Manitoba with 717 and a lower population served per landfill of approximately 1,400 residents. The table below shows how Manitoba compares to other jurisdictions in terms of population and the number of active waste disposal grounds.

Active Waste Disposal Grounds per Jurisdiction

Province/State	Population	No. of Landfills	Population Served per Landfill	Area (km ²)	Waste Disposed per Capita (1996) ⁹ (kg/person/year)
Alberta	2,780,639	242	11,490	638,233	880
Manitoba	1,134,346	314	3,613	547,704	840
Montana	879,000	64	13,734	380,850	n/a
North Dakota	644,000	89	7,236	183,117	n/a
Nova Scotia	931,235	19	49,012	52,841	590
Saskatchewan	1,019,459	717	1,422	651,900	880
Average	1,231,447	241	14,418	409,108	800

⁹ Statistics Canada, *Preliminary Results of the Waste Management Industry Survey: Business Sector, 1996*.

Northern/Remote Community Issues

The Task Force received input from First Nation communities, Community Councils and the Department of Northern Affairs on waste management practices and issues facing northern and remote communities. The difficulty of establishing partnerships, agreements for cost sharing and operating facilities and lack of information on available programs were highlighted by stakeholders. However, examples of cooperative waste management efforts and proposed regional systems were identified (e.g. Berens River and Manigotagan). The Task Force was reminded that waste management solutions designed for southern Manitoba may not be appropriate for the North. Waste management issues of concern to northern and remote communities include:

- waste disposal facility development
- recyclable material collection and marketing
- small populations
- inter-governmental relations and partnership development
- distance to markets
- limited information on status of waste disposal facilities
- limited funds available
- tire clean-up (coordination/information)
- hazardous waste collection (oil/gas/batteries)
- white goods recovery (refrigerant recovery)
- solid waste incineration at remote communities
- deposit system for beverage containers (incentives)
- costing studies needed for northern remote communities
- fish waste (alternate uses, consistent message)
- auto hulks/scrap metal recovery
- information sharing

Greenhouse Gases

Efforts to reduce waste and divert materials from landfill can contribute positively to Manitoba's strategy to reduce greenhouse gas emissions. Solid waste and its management has been identified as a contributor to global warming.¹⁰ The manufacture, distribution, use, and subsequent disposal of products typically result in greenhouse gas emissions. Recent research indicates that recycling and waste prevention are ways to help decrease greenhouse gas associated with those activities. Manufacturing goods from recycled materials typically requires less energy than making them from virgin materials. Using less energy means emitting fewer greenhouse gases. Keeping organic materials out of landfills reduces emissions of methane, a greenhouse gas with 21 times the global warming impact of carbon dioxide.

In addition, reducing waste at source by reusing items or producing products with less material can be even more effective for reducing greenhouse gases as a result of less energy being required to extract, transport, and process raw materials and to manufacture products. More efficient manufacturing means

¹⁰ US Environmental Protection Agency. *PAYT Bulletin: Climate Change, PAYT, and You*. USEPA: 1999.

less energy consumed, fewer fossil fuels burned, and less carbon dioxide emitted into the atmosphere. It also means less material sent to landfills.

Open Burning

While the practice of continuous burning of garbage at local waste disposal sites has been virtually eliminated in Manitoba, controlled burning of approved materials does occur at numerous waste disposal sites, large and small. In some cases, inappropriate materials are included in the burn piles. A number of local WDG operators have eliminated burning entirely by diverting wood, paper and other combustible waste to shredding, composting and recycling systems. Burning of waste is severely restricted in other jurisdictions. The US Environmental Protection Agency Landfill Guidelines limit burning at small waste disposal facilities to infrequent burning of agricultural wastes (not including empty pesticide containers or waste pesticides), land clearing material and diseased trees when in compliance with local air quality regulations.¹¹

Funding Issues

Traditionally municipalities have provided waste collection and disposal services to meet the needs of local residents and businesses. Unlike other municipal infrastructure services (e.g. wastewater treatment, water service, roads etc.) funding for solid waste management system development has largely remained a local municipal responsibility. There is no dedicated support program to help coordinate solid waste management system development or for cost sharing such as those in place for drinking water and other utilities. Funding, investment and operation has remained largely a local government responsibility. In addition, remote, northern and First Nation communities face unique problems.

Increasingly, private sector investment in waste disposal facilities and public/private sector partnerships are being established to provide waste management services. Two commercially operated WDGs are now in operation in Manitoba and municipal partnerships with private sector firms have been established by several municipalities. A number of municipal operators are also looking at the business and commercial opportunities that are afforded by operating a WDG as a regional waste disposal site for solid wastes generated outside of the municipality. In an integrated waste management system the public sector, private sector businesses and non-profit agencies all have a role to play.

Recently, as a result of improved environmental protection requirements and increased commercialization of waste disposal operations (introduction of landfill tipping charges as a revenue source for local governments and private sector operators) waste transfer to regional landfills is increasing. While this is positive for reducing the number of active waste disposal facilities, it also increases the pressure to ensure that consistent standards for waste disposal ground operations are in place. Waste haulers and generators will continue to seek the least cost waste disposal option (tipping fee + transportation). Additionally waste disposal ground operators seeking to increase revenues may offer waste disposal services to out of province generators if economic conditions are appropriate.

¹¹ United States Environmental Protection Agency. *Waste Disposal Facility Criteria Technical Manual*. USEPA: November, 1993, p. 101.

Public Sector Investment

Public sector investment in waste disposal and transfer facilities in Manitoba jumped significantly in 1995 under the Canada Manitoba Infrastructure Program when \$2.7 million in funding was allocated to 14 waste management projects. Funding was allocated on a project specific basis with no coordinated assessment of regional impacts or opportunities.

Between 1992 and 1994 the Province of Manitoba established the Regional Waste Management Assistance Fund. Under this program a total of \$400,000 dispersed in \$20,000 matching grants was allocated to 22 projects involving 90 municipalities to investigate the feasibility of establishing regional waste management systems. Over 50% of these projects are ongoing today. In addition, between 1996 and 1998 the Sustainable Development Innovations Fund supported two regional waste projects with funding support of \$25,000 per regional system participant, including:

- Winkler/Morden/Stanley: \$75,000
- Whitemouth/ Reynolds/Whiteshell Park: \$75,000

Infrastructure Funding

A component of the RWMTF's mandate was to make recommendations on the provision of strategic financial assistance to encourage the development of regional waste management systems. As part of the RWMTF's Terms of Reference, the Sustainable Development Committee of Cabinet approved in principle the provision of grants to a maximum of \$25,000 per municipality under the Sustainable Development Innovations Fund to support the development of regional waste management systems. The Task Force has reviewed requirements for infrastructure support, funding criteria and project eligibility.



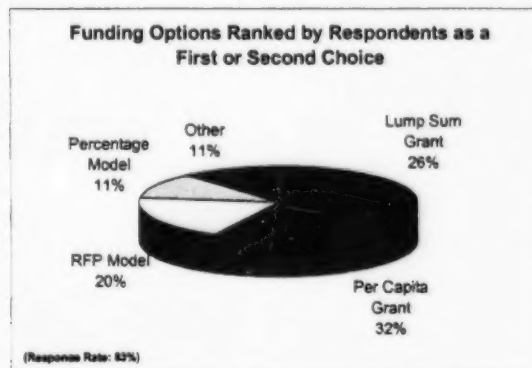
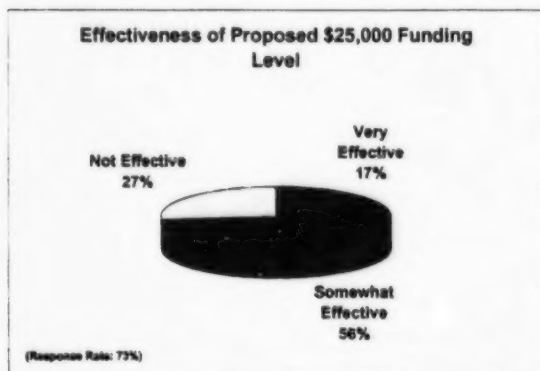
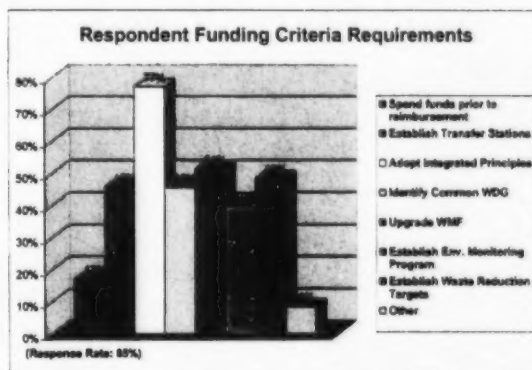
The Task Force reviewed a number of regional waste management funding programs in other jurisdictions. Based on these case studies, a number of regional solid waste funding options have been identified. In addition, feedback on this issue was requested in the RWMTF Survey.

Funding Criteria

The per-capita grant and lump-sum grant models were ranked by survey respondents as the most favourable options for a funding scheme that would encourage the establishment of regional waste management systems. In addition, 68% of respondents felt that the preparation of a waste management plan should be required as a pre-condition for local governments to qualify for funding. Another requirement identified by the majority of survey respondents was the adoption of integrated waste management principles (reduction, collection, composting, etc.) as a condition of funding. Additionally, other funding criteria that received a moderate number of responses included:

- identification of one common waste disposal ground and closure of others within 5 years;
- establishment of transfer stations;
- upgrading of existing waste management facilities to required environmental standards; and
- establishment of system-wide waste reduction targets.

When asked how effective a \$25,000 level of funding would be to encourage the establishment of regional partnerships, over 70% of respondents indicated that it would be somewhat to very effective.



TASK FORCE OBSERVATIONS

The following are observations and general comments with respect to regional and integrated solid waste management activities in Manitoba. They are presented as matters of concern which may warrant consideration by the provincial government. Although they do not form part of the recommendations of the Task Force, they do provide a basis for some of the Task Force's recommendations:

- ❑ Improvements to waste management practices in Manitoba are being made locally and regionally. Numerous examples of innovative approaches to solid waste management were identified. However, local governments are basically on their own to determine what is the most effective system. The outcome is dependent and often limited due to resource constraints, lack of incentives to establish regional partnerships, limited evaluation of available options and limited long term planning.
- ❑ All new generation waste disposal grounds being built in the province meet required environmental standards. However, consistent guidelines are lacking for landfill siting, environmental approval, and operation. Exemptions for small and remote communities may be warranted in some cases.
- ❑ WDG operators have consistently called for a level playing field for siting and operational requirements for old and new generation waste disposal grounds.
- ❑ Training and certification for waste disposal ground operators is required in other jurisdictions and would be beneficial in Manitoba.
- ❑ Unlike other basic infrastructure responsibilities, such as water service, waste water treatment or road construction, there is no funding program or coordinating agency in place to support the development of solid waste management systems.
- ❑ Current waste management trends do not support parallel efforts to increase waste reduction activities in the province, including:
 - low cost waste disposal options;
 - large number of small waste disposal sites;
 - continued development of disposal sites often in close proximity to other facilities;
 - lack of coordination, vision, direction;
 - limited overall planning; and
 - increasing commercialization of waste services (public and private) and competition for waste volumes to increase landfill revenues.
- ❑ Significant achievements have been made in waste reduction and material recycling throughout the province. There is a strategic opportunity to address waste reduction as part of a greenhouse gas reduction strategy.
- ❑ Manitoba's stewardship agencies have provided significant resources to support the development of alternative waste management systems. Continued support is needed along with additional resources to improve integrated waste management systems and to close waste disposal grounds.

- ❑ Strategic assistance, including application of guidelines, regulatory amendment, coordinated development, and technical and financial support in partnership with local governments is lacking and may be needed to encourage improved waste management practices, reduce dependence on landfilling and support the further development of regional waste management systems.
- ❑ Manitoba's current waste disposal ground classification and environmental approval process discourages the development of regional partnerships for populations over 5,000 and encourages the development of smaller facilities receiving less than 4,000 tonnes of waste annually by individual local governments.
- ❑ A commitment to continue working towards the established waste reduction target of 500 kg/person/year beyond 2000 may be appropriate.
- ❑ Alternative solid waste management financing mechanisms, such as weight based tipping fees and user pay systems should be promoted as an incentive to encourage broader waste minimization practices.
- ❑ A lack of coordination and planning among stewardship agencies and government departments has been recognized by stakeholders. Improved planning and coordination may be required to improve waste reduction service delivery to local governments and to reduce confusion over responsibilities.
- ❑ Some jurisdictions have achieved higher waste reduction levels than Manitoba by setting high standards for solid waste disposal operations, establishing regional waste planning requirements, and regulating recycling and waste diversion requirements.
- ❑ There are benefits and barriers to regional services, however regional waste management systems have proven effective for solid waste collection, disposal, processing, material recycling, and marketing in Manitoba and elsewhere.
- ❑ Given the number of planned closures of waste disposal grounds in the province, it is anticipated that the associated volume of waste can be managed through the development of new waste transfer facilities and existing waste disposal ground capacity.
- ❑ Northern and remote communities in Manitoba face unique solid waste management challenges. Programs and solutions that are designed for communities in southern Manitoba may not work in the North.
- ❑ Solid waste management trends affecting other jurisdictions outside Manitoba, such as landfill mining, energy from waste, and waste import and export may affect Manitoba over the next decade.

SOLID WASTE MANAGEMENT VISION

The Task Force has proposed the following Solid Waste Management Vision for Manitoba to provide a framework to guide future solid waste management developments and decision making. Three categories of action; high level of environmental protection, integrated waste management and regional coordination, form the basis of the Vision. It is the intention to have this Vision further refined through on-going multi-sectoral review and public input:

Vision Statement

- ☐ Manitoba will strive to develop an integrated waste management system that protects human health and the environment, reduces dependence on landfilling through waste reduction and diversion, and, where appropriate, activities will be coordinated and planned on a regional basis.

High Level of Environmental Protection

- ☐ Require proposed waste management facility developments to submit an environmental impact assessment, a statement of need, and a regional impact assessment to address broader social and economic impacts and demonstrate that the development meets the long term needs of a specific region (20 years).
- ☐ Establish a single, consistent approval process for all waste management and disposal facilities
- ☐ Establish an evaluation process that involves public input and multi-sectoral review and comment.
- ☐ Establish high environmental standards for all waste management facilities to protect human health and minimize environmental risk. Associated components include:
 - Eliminate all waste disposal facilities posing an environmental risk.
 - Establish guidelines and codes of practice for waste management facilities.
 - Amend the Waste Disposal Ground Regulation to encourage regional waste system development.
 - Encourage regional alliances through funding incentives.
 - Establish consistent siting and operational requirements for waste management facilities based on environmental risk criteria.
 - Evaluate waste facility developments on a site specific basis.
 - Establish separate criteria for the management and disposal of municipal solid waste, construction and demolition waste, and other special wastes.
- ☐ All waste disposal ground and waste management facility operations will be guided by a consistent set of criteria and expectations.
- ☐ Monitor and report on proposals to import waste for disposal.

Integrated Waste Management

- ❑ Continue to work towards achievement of the 50% waste reduction target (500 kg/person/year) beyond the year 2000.
- ❑ Plan and coordinate integrated waste management activities on a regional basis.
- ❑ Encourage all local governments to be part of a waste management region within 10 years (2010).
- ❑ Promote waste minimization practices and waste transfer over landfill disposal.
- ❑ Encourage the adoption and regular update of integrated regional waste management plans by local governments.

Regional Coordination

- ❑ Establish eight benchmark waste management districts to facilitate regional planning exercises (*see map of Potential Regional Waste Management Districts, page 32*).
 - Municipalities may shift regional alliances as needed for cost effectiveness and efficiency, and regional characteristics (flexibility).
- ❑ Designate or establish a lead agency to be responsible for planning and coordinating regional solid waste management developments in partnership with others.
 - Coordinate activities through a corps of regional waste management coordinators.
- ❑ Ensure a continued role for the public and private sector in developing and delivering a cost effective and environmentally sound integrated waste management system.
- ❑ Enhance coordination and partnerships between local governments and stewardship agencies to support waste minimization activities.

Potential Regional Waste Management Districts

Northern

Parklands

IAR
Co-operative

Interlake

Mid Western

RM of
Woodworth

Municipal
Waste
Management

Western

Capital
Region

Whitemouth/
Reynolds/
North Whiteshell Park

Eastern

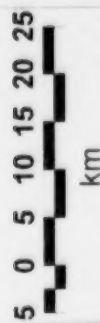
RM of
Louise

RM of
Thompson

Central

Altona/
Gretna

SWAMP
Rhineland



RWMTF RECOMMENDATIONS

Based on the Task Force's findings the following recommendations are made with the intent of supporting the proposed Vision. The following recommendations are framed under three categories of action: high environmental protection; integrated solid waste management; and regional coordination.

1. High Level of Environmental Protection

1.1 Level Playing Field

- 1.1a - Recommendation:** That operating guidelines and codes of practice for waste management facilities be developed through multi-sectoral consultations.
- 1.1b - Recommendation:** That uniform requirements be adopted for all WDG operations or waste transfer sites that may include:
- elimination of open burning;
 - leachate management;
 - daily cover of waste;
 - surface water management;
 - site monitoring for hazardous and radioactive wastes;
 - certified operators;
 - ground water monitoring;
 - weigh scales; and
 - landfill gas management.
- 1.1c - Recommendation:** That open burning of waste at all waste disposal grounds and transfer stations be banned except for infrequent burning of agricultural wastes, land clearing material and diseased trees.
- 1.1d - Recommendation:** That all existing WDGs, of similar Class, meet the same operating requirements within 3 years (2003). That exemptions to requirements as set out in recommendation 1.1b be allowed on a case specific basis where environmental conditions permit, and only for WDGs receiving less than 4,000 tonnes of waste annually. (See Appendix 2)
- 1.1e - Recommendation:** That all waste disposal facilities posing an unacceptable environmental risk be closed within 3 years (2003).
- 1.1f - Recommendation:** That waste management facility operational requirements be consistently enforced.
- 1.1g - Recommendation:** That inter-regional waste transfer and proposals to import waste be monitored and that consideration be given to developing a provincial policy and reporting mechanism on waste importation.

1.2 Waste Management Facility Approvals

- 1.2a - Recommendation:** That in addition to engineering design and environmental impact assessment all new waste management facility developments or WDG upgrades be required to submit a statement of need, and business plan or regional impact assessment (e.g. social, economic, infrastructure impacts) to demonstrate that it meets the long term needs of a region (20 years).
- 1.2b - Recommendation:** That a consistent approval process be established by 2001 for all waste management and disposal facilities to eliminate the existing two tier approval process managed by Manitoba Conservation for facilities serving populations less than 5,000 and facilities serving populations greater than 5,000. (See Appendix 3)

1.3 Regulatory Amendment – The Waste Disposal Ground Regulation

- 1.3a - Recommendation** That the following amendments be made to the Waste Disposal Ground Regulation (see Appendix 2):
- elimination of the population based WDG Class structure;
 - establish provision for codes of practice for WDGs and other waste management facilities; and
 - establish design and operational criteria for municipal solid waste disposal facilities receiving more than 4,000 tonnes of waste annually, facilities receiving less than 4,000 tonnes of waste annually, and for construction and demolition waste disposal sites.
- 1.3b - Recommendation** That waste management facility operators comply with the revised regulations within two years of coming into force.
- 1.3c - Recommendation:** That the regulatory authority be established to approve facilities on the basis of recommendation 1.2a.
- 1.3d – Recommendation** That operator training and certification be required for all WDG operators within 5 years.

2. Integrated Waste Management

2.1 Regional Integrated Waste Management Planning

- 2.1a – Recommendation** That integrated waste management activities be planned and coordinated on a regional basis.
- 2.1b – Recommendation** That all municipalities be encouraged through an incentives based program to voluntarily participate in regional waste management planning and that all municipalities be part of a waste management region over the long term (10 years).
- 2.1c – Recommendation** That an agency be designated or established, with multi-sectoral representation, to coordinate funding, and planning of regional waste management facilities. Objectives of the agency¹² may include:
- Developing partnerships with local governments and private industry to develop and implement programs;
 - Educating the public about the value of resource conservation and the economic and environmental costs of waste disposal;
 - Encouraging the development of markets for recyclable materials;
 - Stimulating development of facilities needed to divert waste from disposal and ensure adequate disposal capacity for materials that cannot feasibly be diverted;
 - Aggressively seeking to protect public health and safety, and the environment by encouraging the cleaning up old, abandoned, and illegal dump sites.
 - Providing for mediation or arbitration services that may arise over disputes associated with regional waste management developments.
- 2.1d – Recommendation** That integrated regional waste management plans be adopted by local governments and revised on a regular basis. Plans may include strategies to address:
- waste collection;
 - waste transfer;
 - disposal;
 - recycling (multi-material, tires, used oil containers and filters, auto hulks, white goods, agricultural chemical containers);
 - composting (organic waste);
 - promotion and education;
 - dead animal disposal;
 - waste reduction;
 - construction and demolition waste;
 - industrial, commercial, and institutional waste;

¹² Adapted from California Integrated Waste Management Board. *Integrated Waste Management Board Strategic Plan*. CIWMB: July 1997.

- hazardous waste (including household hazardous waste);
- bio-medical waste;
- petroleum contaminated soil; and,
- regional participation.

2.2 Integrated Components

- 2.2a – Recommendation** That the Government of Manitoba continue to support waste reduction activities and continue to work towards achievement of the waste reduction target of 500 kg of solid waste per capita per year going to landfill, beyond the year 2000.
- 2.2b – Recommendation** That improvements be made to existing programs in the following areas:
- Used Oil Collection: establishment of used oil collection facilities throughout the province with a focus on Winnipeg and remote and northern communities;
 - Used Tires: improved information flow to municipalities and the public on the tire recycling system with improved effort to notify municipalities of collection services and an increased focus on northern and remote communities;
 - Auto hulks, and white goods, including ozone depleting substance recovery: improved program and recycling system be established in partnership with municipalities with additional emphasis on northern and remote communities;
 - Multi-Material Recycling: enhance regional recycling system development through partnerships with municipalities and northern and remote communities, and where appropriate enhance material handling and processing facilities through strategic infrastructure investment and coordination of recyclable material marketing.
- 2.2c – Recommendation** That incentives for organic waste management be established and that demonstration projects be implemented.
- 2.2d – Recommendation** That a household hazardous waste collection program based on stewardship principles be established.
- 2.2e – Recommendation** That where appropriate, coordinated activities or consolidation of responsibilities be considered before establishing new stand alone stewardship agencies.

2.3 Partnerships

- 2.3a – Recommendation:** That Manitoba's stewardship agencies strengthen partnerships with municipalities and private sector waste management firms to support waste minimization activities and strategies.

- 2.3b – Recommendation:** That regional recycling systems and co-operative marketing be encouraged and facilitated by stewardship agencies.
- 2.3c – Recommendation:** That collaborative efforts be undertaken among stewardship agencies to support regional integrated waste management systems.
- 2.3d – Recommendation:** That support be provided for regional waste management pilot projects to enhance and demonstrate the benefit of regional partnerships and integrated waste management planning, including a project for:
- Manitoba's Capital Region,
 - Rural Manitoba, and
 - Northern Manitoba
- 2.3e – Recommendation:** That funding be made available from stewardship agencies and the provincial government to cost share regional recycling efforts.
- 2.3f – Recommendation:** That Manitoba Conservation take a lead role to implement the partnership recommendations and develop an "umbrella framework" for coordinating stewardship agencies activities.

2.4 Economic Incentives

- 2.4a – Recommendation:** That waste management facility operators use full cost accounting principles to track waste management costs.
- 2.4b – Recommendation:** That economic incentives and alternative financing mechanisms be promoted (unit based pricing, tipping fees, user-pay) to encourage waste reduction and improve cost recovery.
- 2.4c – Recommendation:** That established product stewardship principles and programs be maintained and expanded and that program reviews be undertaken to enhance program efficiency and effectiveness.

3. Regional Coordination

3.1 Technical Assistance

- 3.1a – Recommendation:** That the Province of Manitoba designate or establish an agency to facilitate further development of regional waste management activities in the province and to support public and private sector planning of regional integrated waste management systems (see recommendation 2.1c).
- 3.1b – Recommendation:** That improved coordination of integrated regional waste management activities be established through a corps of regional waste management coordinators (8 Regions) funded through a cost sharing arrangement.

3.1c – Recommendation: That a comprehensive information base be established on waste management services and waste reduction activities and practices in partnership with the Association of Manitoba Municipalities, Northern Association of Community Councils, Province of Manitoba, stewardship agencies, and other interested associations.

3.2 Funding

3.2a – Recommendation: That the Province of Manitoba establish a funding program to support the development of regional integrated waste management systems in Manitoba with the following conditions:

- That establishment of regional planning process be a condition for funding.
- That funding be available to all municipal corporations, and community councils, and to First Nations communities if partnering with off-reserve communities.
- That funding priority be given to:
 - closure and decommissioning of waste disposal grounds,
 - establishment of waste transfer stations,
 - waste diversion systems,
 - regional waste management system development.

3.2b – Recommendation: That funding for development of a new “regional” waste disposal facility be considered, only if a plan is developed demonstrating the need for the facility and showing that it is the only viable option for a municipality.

3.2c – Recommendation: That an individual municipal corporation be eligible for a grant of up to \$10,000, but not more than 50% of project cost to close and decommission one or more WDGs that are owned or operated by the local government and that would result in, at most, one operational facility in the municipality.

3.2d – Recommendation: That in addition to funding for WDG closure, local governments participating in a regional partnership be eligible for funding not to exceed \$25,000 per municipal or local government participant. The following criteria be applied in reviewing individual funding proposals:

- a regional partnership established for a public or private waste disposal, recycling or other waste management facility or service.
 - one time only grant available to individual local governments;
 - total funds contributed not to exceed 50% of total project costs;
 - funds to be expended by proponent prior to reimbursement;
 - claim for funding must be concluded within two years of funding approval (applicant must re-apply if term expires);

- retroactive funding of projects may be considered on an individual project basis for system improvements if all environmental requirements have been met; and
 - project must have received all necessary environmental and development approvals and comply with standards.
- eligible expenditures for regional partnerships may include:
 - expansion of existing disposal facilities to serve as a regional facility (weigh scales, hydro-electric power, buildings, leachate management, fencing etc.);
 - engineering design, and project management fees;
 - equipment and facilities, including landfill compactors, buildings etc;
 - waste transfer stations;
 - decommissioning of operational or closed WDGs and establishment of environmental monitoring systems; and
 - waste diversion systems (waste reduction/alternative management systems e.g. composting, mechanical separation/processing systems, etc.).

3.2e – Recommendation: That the following approval process be considered:

Approval Process for Proposed Projects	Approval Process for Retroactive Projects
a) proposal submission	a) submission request with receipts
b) eligibility determined	b) eligibility determined
c) funding approval (commit funds)	c) funding approval
d) funding issued on submission of receipts within two years	d) funding issued
	e) WDG Closure: after April 1, 1998
	f) Regional System: after April 1, 1997

3.3 Regional Boundaries

3.3a – Recommendation: That for planning purposes 8 benchmark waste management districts be designated to provide focus for regional waste management activities.

3.3a – Recommendation: That the regional district boundaries be flexible to allow for the formation of appropriate regional waste management systems over the long term.

3.4 Northern and Remote Communities

- 3.4a – Recommendation:** That the unique characteristics of waste management practices associated with northern and remote communities be recognized by stewardship programs and that a technical advisory committee be established to address alternative solid waste services for northern and remote communities.
- 3.4b – Recommendation:** That all relevant agencies promote inter-governmental and inter-jurisdictional infrastructure and servicing partnerships to address the unique characteristics of integrated waste management practices for northern and remote communities.
- 3.4c – Recommendation:** That stewardship agencies take steps to improve communication and program delivery to northern and remote communities.

APPENDIX 1

DEFINITIONS

Definition of a Region

A regional system is defined as 3 or more municipal corporations in a formal partnership for providing integrated waste management services; or 2 or more municipal corporations and a Community Council, First Nation community or Park in a formal partnership for providing integrated waste management services; or 3 or more municipalities contracting with a public or private waste management firm/agency for waste disposal, collection or recycling services.

An integrated system involves waste transfer, disposal, WDG operation, recycling, composting, special waste management (HHW), energy from waste, WDG decommissioning, waste shredding, processing or other alternative management practice.

A formal partnership includes:

- Regional Waste Management Authority,
- Council resolution, by-law or other intergovernmental agreement
- Co-operative or Regional Alliance (MOU)
- Contract.

Definition of Remote Community

A remote community is defined as a community that for three consecutive months of the year, the community's municipal solid waste cannot be transported by rail, truck, or ship to a regional waste management facility.¹⁰

Definition of Integrated Waste Management

Integrated waste management involves the use of a combination of techniques and programs to manage the municipal solid waste stream. It is based on the fact that the waste stream is made up of distinct components that can be collected, managed and disposed of separately and that a combination of approaches can be used to manage targeted portions of the waste stream. Local governments are in the best position to determine how services are provided, who provides the service and under what conditions this takes place. This does not mean that local governments must deliver all services but should take responsibility for coordinating how services are delivered.

The overall success of a waste management system will depend on external influences such as provincial program support, product stewardship initiatives, public participation and involvement and private sector cooperation and partnerships. An integrated system allows for participation of public, private, and non-profit sector participation in roles appropriate for each. Most importantly, an integrated system assesses all waste management system costs as well as revenue creating opportunities. Failure to

do this may mean that revenue producing activities such as landfill are favoured over waste reduction activities that may require ongoing financial commitments.^{13,14}

System components may include a mix of alternatives that include:

- Source reduction;
- Composting;
- Transfer;
- Waste-to-energy;
- Collection (user pay);
- Recycling (stewardship);
- Disposal;
- Segregation of waste streams at source.

¹³ US Environmental Protection Agency. *Decision-Makers Guide to Solid Waste Management*. USEPA: November 1989.

¹⁴ United Nations Environmental Program International Environmental Technology Centre. *International Source Book on Environmentally Sound Technologies for Municipal Solid Waste Management*. UNEP: Publication date unknown.

APPENDIX 2

Manitoba Conservation's Proposed WDG Classification and Minimum Requirements

Estimated Solid Waste Generation Rates in Manitoba

The following table provides estimated solid waste generating rates for different type of communities in Manitoba. The purpose of the table is to provide guidance in the design of landfills and to lend some flexibility in the classification of waste disposal grounds.

Types of Community	Typical Types of Waste Generated	Per Person Per Day (kg)	Per Person Per Year (tonnes)
Major Centres*	Industrial, commercial, institutional, construction and demolition, residential	2	0.75
Residential	Residential, institutional, some commercial, local construction and demolition	1.5	0.5
Seasonal (Cottages, seasonal resorts)	Residential, some commercial, local construction and demolition	1	0.15 **

*Excludes City of Winnipeg and City of Brandon. Rate for Winnipeg and Brandon is estimated at 1 tonne/capita/year and 0.85 tonne/capita/year respectively.

** Seasonal rate is based on a three days per week occupation and 6 months period of usage per year.

Definitions:

Residential Waste: Solid wastes generated in single and multiple-family homes.

Commercial Waste: Solid waste originated from wholesale, retail, or service establishments such as office buildings, stores, market, theatres, hotels and warehouses.

Institutional Waste: Solid wastes originated from schools, hospitals, laboratory, and other public buildings.

Industrial Waste: Solid wastes discarded from industrial operations or derived from manufacturing process.

WASTE DISPOSAL GROUND CLASSIFICATION

(BASED ON THE ESTIMATED TOTAL WEIGHT OF SOLID WASTE RECEIVED)

Class 1 Site: Total weight exceeds 4000 tonnes per year.

Class 2 Site: Total weight exceeds 1000 tonnes but less than 4000 tonnes per year.

Class 3 Site: Total weight is less than 1000 tonnes per year.

CLASS 1 WASTE DISPOSAL GROUND REQUIREMENTS - CLASSIFICATION CRITERIA

A waste disposal ground meeting any one of the following conditions is classified as a Class 1 site:

1. any existing or proposed waste disposal site receiving solid waste in excess of 4000 tonnes per year or 350 tonnes per month; or
2. any existing or proposed waste disposal site importing or accepting solid waste from another jurisdiction for commercial purposes, i.e. waste disposal for profit (this criterion does not apply to regional waste management partnership arrangement); or
3. any existing or proposed private disposal site established for commercial purposes, i.e. waste disposal for profit.

APPROVAL REQUIREMENTS

Any proposal to establish a new Class 1 waste disposal ground or to expand an existing Class 1 waste disposal ground is required to apply for an Environment Licence in accordance with Section 11 of the Environment Act.

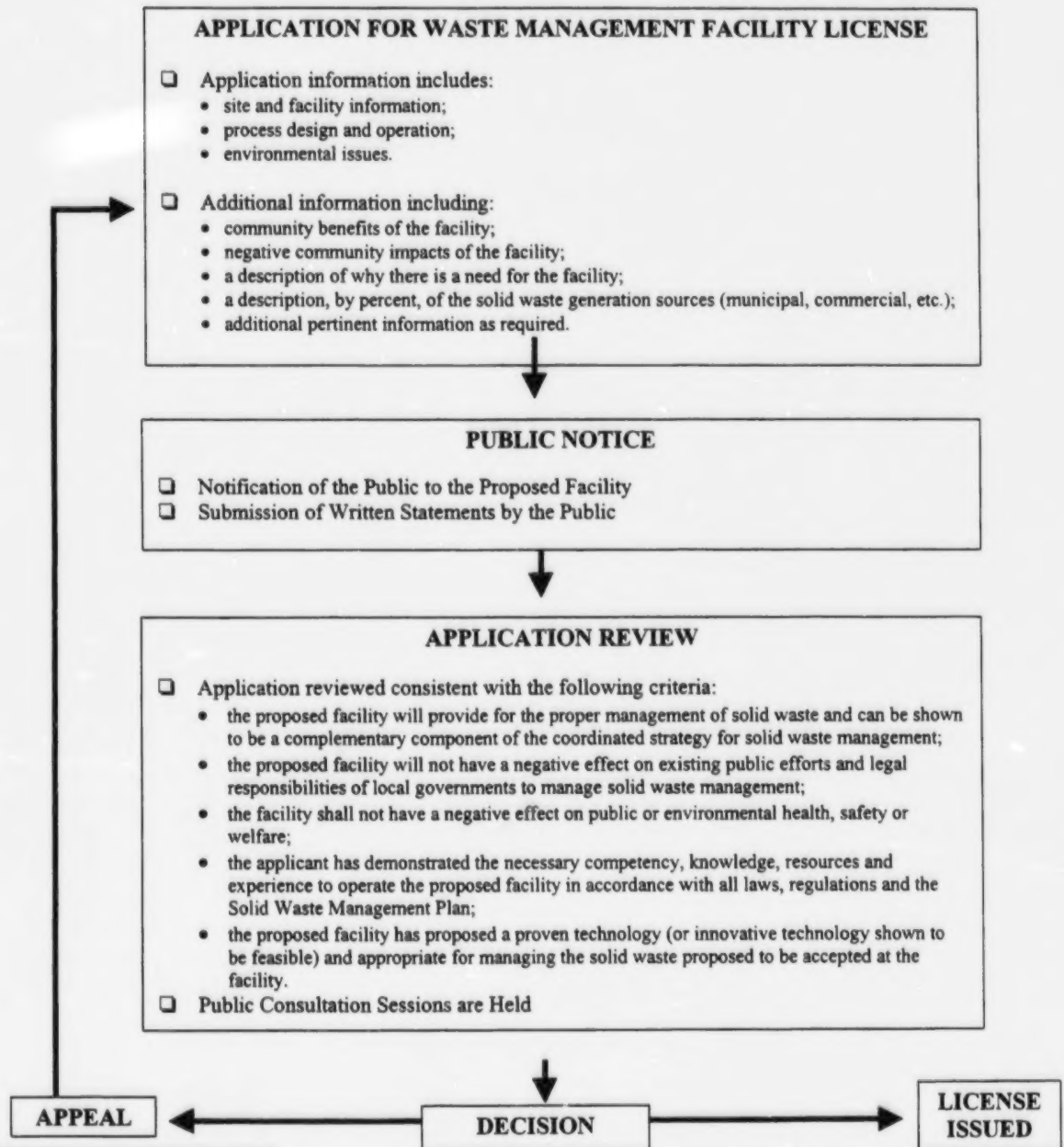
Note: Expanding an existing Class 2, Class 3 or a private waste disposal ground operation into a Class 1 site is deemed to be a proposal to establish a new Class 1 waste disposal ground.

MINIMUM REQUIREMENTS

1. A properly designed and constructed impermeable liner with a leachate collection system.
2. An approved leachate management (disposal or treatment) system.
3. A scale and building at the entrance.
4. A radioactive detection device at the scale building unless otherwise approved.
5. A properly designed and constructed internal drainage system.
6. All weather access and internal roads.
7. A fence surrounds the entire site with a lockable gate unless otherwise approved.
8. Adequate monitoring wells in place with an approved monitoring plan.
9. Adequate storage area for recyclable materials.
10. An approved plan to prevent the disposal of hazardous waste.
11. Trained supervisory personnel on site during operating hours.
12. An approved site development and operation plan.
13. Daily cover of waste.
14. No burning.
15. No liquid waste disposal.
16. Adequate insurance and performance bond.
17. A closure plan.

APPENDIX 3

Potential Waste Management Facility Evaluation Process¹⁵



¹⁵ The conceptual waste management facility evaluation process has been adapted from Morris County, New Jersey, *Guidelines for Evaluation of Solid Waste Facility Request to be Included in the Morris County Solid Waste Management Plan*. Morris County Solid Waste Advisory Council: September 1998, and the Province of Alberta's *Environmental Protection and Enhancement Act*.